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A REPORT OF FACTORS FOR USE IN
APPORTIONING FUNDS FOR THE NATIONAL
SYSTEM OF INTERSTATE AND
DEFENSE HIGHWAYS

LETTER

FROM THE

SECRETARY OF COMMERCE

TRANSMITTING

AN ESTIMATE OF THE COST OF COMPLETING THE
NATIONAL SYSTEM OF INTERSTATE AND DEFENSE
HIGHWAYS IN EACH STATE AND THE DISTRICT OF
COLUMBIA, PREPARED FOR THE PURPOSE OF APPOR-
TIONING INTERSTATE SYSTEM FUNDS AUTHORIZED
FOR THE FISCAL YEARS ENDING JUNE 30, 1960, 1961,
AND 1962, PURSUANT TO SECTION 108 (d) OF THE
FEDERAL-AID HIGHWAY ACT OF 1956



JANUARY 7, 1958.—Referred to the Committee on Public Works
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LETTER OF TRANSMITTAL

THE SECRETARY OF COMMERCE,
Washington, D. C., January 7, 1958.

HON. SAM RAYBURN,
Speaker of the House of Representatives,
Washington, D. C.

DEAR MR. SPEAKER: In accordance with the requirements of section 108 (d) of the Federal-Aid Highway Act of 1956 (Public Law 627, 84th Cong.), I am transmitting herewith an estimate of the cost of completing the National System of Interstate and Defense Highways in each State and the District of Columbia prepared for the purpose of apportioning Interstate System funds authorized for the fiscal years ending June 30, 1960, 1961, and 1962.

The factors contained in this estimate of costs of construction are derived from analysis and summation of estimates of cost set forth in detail in 49 bound volumes of individual State reports which, although considered a part of this transmittal, are being sent directly to the House of Representatives Public Works Committee hearing room because of their size.

Making an estimate of this magnitude is a complex engineering job and requires exercise of sound judgment in forecasting probable highway needs of each State in the calendar year 1975. The basic elements of the job have been done in the individual State highway departments where there is available the largest collection of needed basic data, skills, and experience bearing on the highway problems of each State. These estimates, uniformly prepared under a common set of guides and engineering standards developed jointly by the Bureau of Public Roads and representatives of the State highway departments, represent the best coordinated judgment in this important matter.

In submitting this estimate I wish to recognize and pay tribute to the State highway departments, all of which have cooperated to the fullest in its preparation. This is but another working example of the fine relationship of cooperative endeavor which has historically characterized the Federal-aid highway program. In executing the program set out in these estimates it is of great importance that this State and Federal partnership be maintained and even strengthened wherever possible.

Although this estimate shows an increase in cost over the amounts authorized by section 108 (b) of the 1956 act, I do not see any need for consideration at the present time of new legislative measures which would add to the income of the highway trust fund. This is the first estimate of a series of five and is made in the early stage of the highway program launched by the 1956 act. As construction of the Interstate System progresses toward completion and as the amount of remaining work correspondingly decreases, future estimates of cost will be made on a broader base of experience and these estimates will

III

IV

LETTER OF TRANSMITTAL

progressively become more accurate by reflecting actual trends in cost, either upward or downward, that cannot be forecast as well now. Until this additional experience is acquired, consideration of any adjustments in authorization of funds or revenues would be premature.

I recommend it for approval by the Congress.

Sincerely yours,

SINCLAIR WEEKS,
Secretary of Commerce.

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CONTENTS

| | Page |
|---|------|
| Purpose of report..... | 1 |
| The designated system covered by this estimate..... | 1 |
| Uniform application of geometric and construction standards..... | 3 |
| Preparation of the estimate and the basic principles and procedures followed..... | 3 |
| Cost summaries and apportionment factors..... | 4 |
| Comparison of present financing with present estimate of cost..... | 7 |
| Causes for the increased cost reflected in this report..... | 8 |
| Conclusions..... | 8 |

v

A REPORT OF FACTORS FOR USE IN APPORTIONING FUNDS FOR THE NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS

PURPOSE OF REPORT

The Federal-Aid Highway Act of 1956, section 108 (d), requires the Secretary of Commerce to submit to the Congress within 10 days subsequent to January 2, 1958, an estimate of the cost of completing the National System of Interstate and Defense Highways.

The purpose of the estimate is to derive the ratio of cost of completing the Interstate System in each State to the cost of completing the system in all of the States to serve as a basis for apportioning funds authorized for the fiscal years 1960, 1961, and 1962. The 1956 act specified this method of apportionment in order to carry out its stated objective of completing the Interstate System simultaneously in all States.

The estimate presented herein is the first of a series to be submitted to the Congress in accordance with the 1956 act. Revised estimates must be submitted in January of 1962, 1966, 1967, and 1968, to establish the ratios for purposes of apportioning funds for the fiscal years 1963-69.

THE DESIGNATED SYSTEM COVERED BY THIS ESTIMATE

The National System of Interstate and Defense Highways, known as the Interstate System, was designated under authority given in the Federal-Aid Highway Act of 1944. This system was not to exceed 40,000 miles in total length and was to be located to connect by routes, as direct as practicable, the principal metropolitan areas, cities, and industrial centers, to serve the national defense, and connect at suitable border points with the routes of continental importance in the Dominion of Canada and the Republic of Mexico.

The Interstate System was selected by joint action of the State highway departments and the Bureau of Public Roads, and routes comprising an estimated 37,700 miles were designated on August 2, 1947. Additional routes limited to those around and through the urban areas, totaling an estimated 2,300 miles, were designated in September 1955. Pending the necessary engineering studies to determine the most economic alignments, the location of these routes was diagrammatic only, and for convenience and in the absence of detailed engineering studies, their lengths were measured along the existing principal highways.

Section 108 (l) of the 1956 act increased the authorized length of the Interstate System from 40,000 to 41,000 miles. Moreover, in developing the estimates for this report, the States found that by more accurate measurement and by the selection of better locations

for the routes already designated, their previously estimated length would be reduced to approximately 38,548 miles.

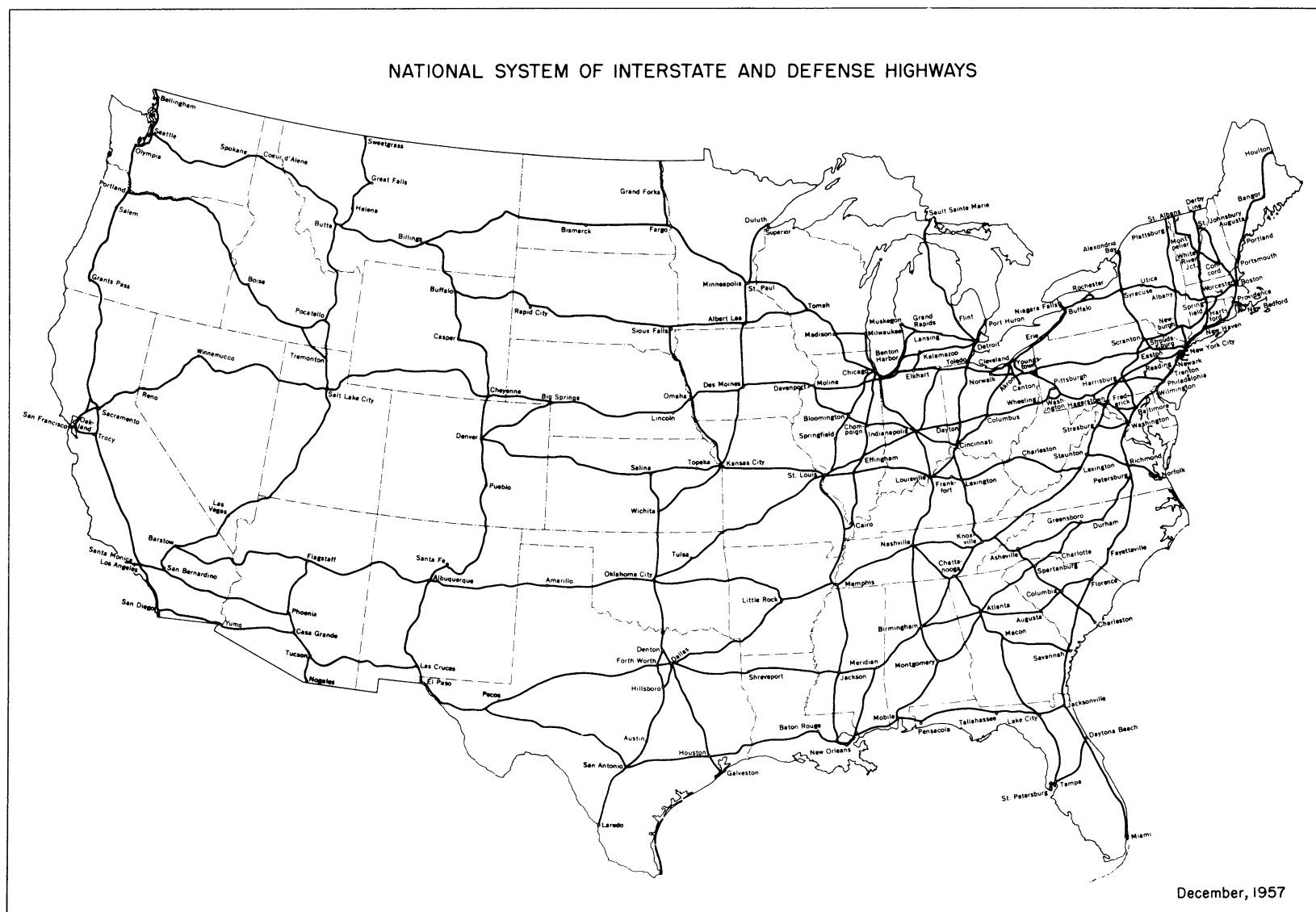
On October 18, 1957, the Secretary of Commerce announced 2,102 miles of interstate routes expected to be added to the system. None of the cost of this mileage is included in the present estimate. The 1,000-mile expansion of the system is specifically excluded by section 108 (1) of the 1956 act, and the 1,102 miles of the savings made possible as a result of more direct locations became available subsequent to July 1, 1956, which is used as the base date for preparation of the cost estimate in this report.

Plate A shows the location of the designated routes which form the basis of this estimate. Table A shows the mileage of the Interstate System as well as the mileage of the other Federal-aid highway systems in each of the States.

TABLE A.—Mileages of Federal-aid highway systems

| State | Mileages of Federal-aid highway systems | | | |
|---------------------------|---|---------------------------|-----------------------|---------|
| | Interstate | Other Federal-aid primary | Federal-aid secondary | Total |
| Alabama..... | 878 | 5,238 | 16,971 | 23,087 |
| Arizona..... | 1,161 | 1,446 | 3,777 | 6,384 |
| Arkansas..... | 522 | 3,376 | 13,745 | 17,643 |
| California..... | 2,135 | 5,047 | 10,233 | 17,415 |
| Colorado..... | 674 | 3,592 | 3,850 | 8,116 |
| Connecticut..... | 275 | 989 | 1,153 | 2,417 |
| Delaware..... | 40 | 526 | 1,419 | 1,985 |
| Florida..... | 1,111 | 4,260 | 10,726 | 16,097 |
| Georgia..... | 1,112 | 7,267 | 13,005 | 21,384 |
| Idaho..... | 611 | 2,440 | 4,620 | 7,671 |
| Illinois..... | 1,608 | 8,902 | 10,868 | 21,378 |
| Indiana..... | 1,090 | 4,355 | 15,837 | 21,282 |
| Iowa..... | 709 | 9,392 | 33,137 | 43,238 |
| Kansas..... | 803 | 7,179 | 22,782 | 30,764 |
| Kentucky..... | 605 | 3,804 | 15,216 | 19,625 |
| Louisiana..... | 595 | 2,566 | 7,730 | 10,891 |
| Maine..... | 313 | 1,621 | 2,299 | 4,233 |
| Maryland..... | 350 | 2,004 | 5,973 | 8,327 |
| Massachusetts..... | 450 | 1,723 | 2,206 | 4,379 |
| Michigan..... | 1,066 | 5,831 | 21,732 | 28,629 |
| Minnesota..... | 888 | 7,941 | 19,317 | 28,146 |
| Mississippi..... | 676 | 4,472 | 9,487 | 14,635 |
| Missouri..... | 1,095 | 7,652 | 19,365 | 28,112 |
| Montana..... | 1,180 | 4,687 | 4,467 | 10,334 |
| Nebraska..... | 488 | 5,165 | 13,100 | 18,753 |
| Nevada..... | 534 | 1,656 | 2,486 | 4,676 |
| New Hampshire..... | 215 | 992 | 1,590 | 2,797 |
| New Jersey..... | 368 | 1,670 | 1,980 | 4,018 |
| New Mexico..... | 1,003 | 3,013 | 5,236 | 9,252 |
| New York..... | 1,210 | 9,563 | 19,311 | 30,084 |
| North Carolina..... | 677 | 6,173 | 24,112 | 30,962 |
| North Dakota..... | 504 | 3,008 | 13,531 | 17,043 |
| Ohio..... | 1,344 | 6,422 | 16,905 | 24,671 |
| Oklahoma..... | 784 | 7,195 | 11,747 | 19,726 |
| Oregon..... | 717 | 3,305 | 5,463 | 9,485 |
| Pennsylvania..... | 1,435 | 6,035 | 13,220 | 20,690 |
| Rhode Island..... | 71 | 392 | 384 | 847 |
| South Carolina..... | 679 | 3,937 | 13,396 | 18,012 |
| South Dakota..... | 512 | 4,290 | 12,383 | 17,185 |
| Tennessee..... | 988 | 4,323 | 9,735 | 15,046 |
| Texas..... | 2,889 | 14,219 | 27,855 | 44,963 |
| Utah..... | 634 | 1,519 | 3,359 | 5,512 |
| Vermont..... | 321 | 1,237 | 1,804 | 3,362 |
| Virginia..... | 996 | 3,683 | 18,034 | 22,713 |
| Washington..... | 613 | 2,974 | 9,648 | 13,235 |
| West Virginia..... | 207 | 2,370 | 10,671 | 13,248 |
| Wisconsin..... | 452 | 5,883 | 18,624 | 24,959 |
| Wyoming..... | 931 | 2,618 | 2,124 | 5,673 |
| District of Columbia..... | 29 | 112 | 78 | 219 |
| Hawaii..... | | 532 | 602 | 1,134 |
| Puerto Rico..... | | 550 | 1,085 | 1,635 |
| Total..... | 38,548 | 209,146 | 528,378 | 776,072 |

Plate A



UNIFORM APPLICATION OF GEOMETRIC AND CONSTRUCTION STANDARDS

Section 108 (i) of the 1956 act requires the geometric and construction standards for the Interstate System to be approved by the Secretary of Commerce in cooperation with the State highway departments, and that these standards shall be adequate for the types and volumes of traffic forecast for the year 1975. Appropriate committees composed of State highway department and Bureau of Public Roads engineers had been working for several years under sponsorship of the American Association of State Highway Officials in developing design standards for the Interstate System. The standards used in making the estimate reported herein were adopted by full membership vote of the American Association of State Highway Officials on July 12, 1956, and approved July 17, 1956, by the Commissioner of Public Roads acting for the Secretary of Commerce.

To serve as a standard guide, the Bureau of Public Roads, working with representatives from the State highway departments, prepared in October 1956 an Instruction Manual for Preparation and Submission of Detailed Estimate of the Cost of Completing the Interstate System in Accordance with Section 108 (d) of the Federal-Aid Highway Act of 1956.

This manual outlined in detail the procedures to be followed in preparation of the estimate. It was furnished to all State highway departments. An additional guide was prepared by the Bureau of Public Roads and furnished to the States to serve as a means of checking their forecasts of traffic. Since everyone working on the estimate was provided with the same guides, maximum uniformity has been obtained.

Uniformity as used here does not mean that the average cost of constructing a mile of road, or any other average factors, will be the same in all States. Such a comparison of averages is meaningless because of wide variations in conditions such as traffic, terrain, climate, and other factors peculiar to individual States and even within different portions of the same State.

Within the scope of practical uniformity there is a balance between traffic needs in a particular circumstance and the highway design used to satisfy that need. There are and should be provisions for some range and variation in design. These variations will include such things as widths of rights-of-way and the kind of improvements to be removed therefrom, pavement and subbase thickness, bridge foundations and types and the frequency and length of structures, number of traffic lanes, frequency and complexity of interchanges and grade separations, and many other elements involved under various local conditions. Uniformity in this sense, therefore, means the application in all of the States of the design range provided in the Geometric Design Standards approved for the Interstate System pursuant to section 108 (i) of the 1956 act.

PREPARATION OF THE ESTIMATE AND THE BASIC PRINCIPLES AND PROCEDURES FOLLOWED

The estimate of cost of completing the Interstate System was prepared in each State by personnel from the State highway departments and the division offices of the Bureau of Public Roads. Representa-

tives from both the Bureau's regional offices in the field and the headquarters office in Washington worked closely with the State and division office personnel in the preparation of the estimate. This procedure provided the close supervision necessary for a high level of uniformity.

Each State has compiled its estimate in a bound volume following a standard format for all States which includes maps showing the location of the several interstate routes in that State, plates showing the engineering features, and tables listing the design criteria, route and section mileages, and estimated costs for each section broken down into major elements of construction.

On June 29, 1956, when the 1956 act was approved, sections of the Interstate System were in various stages of development, ranging from the most elemental preliminary planning upward through completed sections already in use. In estimating the cost of completing the Interstate System in accordance with the adopted geometric and construction standards, all work in a financed status as of July 1, 1956, was considered as having been completed. This means that the cost of any work on the Interstate System, which was to be accomplished with funds already assigned for construction, has not been included in this estimate.

It was also necessary to insure the use of a common base period for the unit construction prices to be used in the estimate. Since all of the States would be working on their estimates in the early part of the calendar year of 1957, average cost indexes of construction for the last half of the calendar year of 1956 were selected.

On completion of each State's estimate, it was forwarded through the field offices of the Bureau of Public Roads and then to the Washington office where detailed checks, analyses, and summaries of the States' estimates have been made.

COST SUMMARIES AND APPORTIONMENT FACTORS

The data summarized in the following tables are derived from material presented in the 49 volumes of the reports.

Table B lists by States (1) the amounts of the unobligated balances as of July 1, 1956, of the Federal-aid interstate funds apportioned for the fiscal years 1954-57, inclusive, under the Federal-Aid Highway Acts of 1952 and 1954 with corresponding amounts of estimated State matching funds, (2) the amounts of interstate funds apportioned since July 1, 1956, for the fiscal years 1957-59, inclusive, under the Federal-Aid Highway Act of 1956 with corresponding amounts of estimated State matching funds, and (3) amounts for work expected to be financed with other than interstate and State matching funds. In order to comply with the intent of the 1956 act these amounts have been excluded from the cost figures to be used in establishing the factors for apportionment of funds authorized for the 1960 and later fiscal years.

Table C lists the estimates of cost by States for all work not financed as of July 1, 1956, which was required to complete the Interstate System. These costs are shown in three categories: (1) Preliminary engineering, (2) right-of-way, and (3) construction. The summation of the cost of these three elements of work less the total amounts

shown in table B represent the remaining cost to complete the Interstate System. The ratio of this cost in each State to the sum of the costs in all the States determines the factors for apportionment of funds for the fiscal years 1960, 1961, and 1962.

Table D shows in summary the remaining cost in each State as described in table C and the resulting apportionment factor for each State.

TABLE B.—Amounts not included in costs used to determine apportionment factors—Sec. 108 (d)

[Thousands of dollars]

| State | Total of 1956 act interstate apportionments 1957-59 | Estimated State funds to match 1956 act funds for 1957-59 | Balance as of July 1, 1956, of apportionments from 1952 and 1954 acts | Estimated State funds to match balance of 1952 and 1954 acts, interstate funds | Amounts for work expected to be financed with other than interstate and State matching funds | Total |
|---------------------------|---|---|---|--|--|-----------|
| Alabama..... | 95,524 | 10,614 | 2,641 | 1,761 | 10,547 | 121,087 |
| Arizona..... | 53,787 | 3,191 | 530 | 154 | 150 | 57,812 |
| Arkansas..... | 67,910 | 7,545 | 3,985 | 2,657 | | 82,097 |
| California..... | 269,341 | 24,475 | | | 242,217 | 536,033 |
| Colorado..... | 63,967 | 6,088 | 2,500 | 1,351 | 1,365 | 75,271 |
| Connecticut..... | 45,180 | 5,020 | 2,962 | 1,975 | 36,376 | 91,513 |
| Delaware..... | 29,313 | 3,257 | 2,256 | 1,544 | 49,541 | 85,911 |
| Florida..... | 79,578 | 8,842 | 2,463 | 1,642 | 3,584 | 96,109 |
| Georgia..... | 108,923 | 12,102 | 5,570 | 3,723 | 327 | 130,645 |
| Idaho..... | 47,578 | 3,975 | 2,684 | 1,198 | | 55,435 |
| Illinois..... | 220,986 | 24,554 | 672 | 454 | 370,640 | 617,306 |
| Indiana..... | 114,014 | 12,668 | 8,414 | 5,609 | | 140,705 |
| Iowa..... | 95,407 | 10,601 | 6,332 | 4,379 | 6,382 | 123,101 |
| Kansas..... | 84,911 | 9,435 | 363 | 242 | | 94,951 |
| Kentucky..... | 87,817 | 9,757 | 3,723 | 2,634 | | 103,931 |
| Louisiana..... | 77,250 | 8,583 | 3,217 | 2,144 | | 91,194 |
| Maine..... | 37,702 | 4,189 | 1,556 | 1,037 | 4,254 | 48,738 |
| Maryland..... | 56,377 | 6,264 | 1,541 | 1,028 | 41,597 | 106,807 |
| Massachusetts..... | 100,122 | 11,125 | 2,116 | 1,411 | 43,328 | 158,102 |
| Michigan..... | 169,006 | 18,778 | 1,752 | 1,188 | 3,565 | 194,289 |
| Minnesota..... | 105,801 | 11,756 | 2,787 | 1,858 | | 122,202 |
| Mississippi..... | 74,354 | 8,261 | 3,062 | 2,053 | | 87,730 |
| Missouri..... | 126,728 | 14,081 | 287 | 204 | 4,623 | 145,923 |
| Montana..... | 67,295 | 6,396 | 4,919 | 2,673 | 115 | 81,398 |
| Nebraska..... | 67,166 | 7,463 | 5,235 | 3,626 | 1,335 | 84,825 |
| Nevada..... | 48,932 | 2,575 | 1,969 | 300 | | 53,776 |
| New Hampshire..... | 29,313 | 3,257 | 2,120 | 1,413 | 4,583 | 40,686 |
| New Jersey..... | 102,673 | 11,408 | 6,782 | 4,521 | 246,691 | 372,075 |
| New Mexico..... | 57,024 | 4,570 | 205 | 87 | | 61,886 |
| New York..... | 333,282 | 37,031 | 5,311 | 3,541 | 687,857 | 1,067,022 |
| North Carolina..... | 119,333 | 13,259 | 4,788 | 3,192 | | 140,572 |
| North Dakota..... | 51,838 | 5,760 | 2,761 | 1,840 | | 62,199 |
| Ohio..... | 200,393 | 22,266 | 3,061 | 2,041 | 6,830 | 234,591 |
| Oklahoma..... | 84,012 | 9,335 | 2,577 | 1,881 | | 97,805 |
| Oregon..... | 63,469 | 5,228 | 10 | 6 | 2,301 | 71,014 |
| Pennsylvania..... | 251,152 | 27,906 | 8,519 | 5,679 | 78,308 | 371,564 |
| Rhode Island..... | 29,313 | 3,257 | 317 | 211 | | 33,098 |
| South Carolina..... | 63,023 | 7,003 | 3,475 | 2,317 | | 75,818 |
| South Dakota..... | 54,437 | 5,266 | 2,192 | 1,195 | 518 | 63,608 |
| Tennessee..... | 99,935 | 11,104 | 7,213 | 4,809 | | 123,061 |
| Texas..... | 270,186 | 30,021 | 813 | 583 | | 301,603 |
| Utah..... | 45,644 | 2,448 | 90 | 23 | | 48,205 |
| Vermont..... | 29,312 | 3,257 | 2,232 | 1,526 | 50 | 36,377 |
| Virginia..... | 94,722 | 10,525 | 3,246 | 2,164 | 89,340 | 199,997 |
| Washington..... | 75,517 | 7,734 | 3,021 | 1,783 | 3,673 | 91,728 |
| West Virginia..... | 55,756 | 6,195 | 4,031 | 2,688 | | 68,670 |
| Wisconsin..... | 106,688 | 11,854 | 6,752 | 4,639 | 377 | 130,310 |
| Wyoming..... | 48,697 | 3,733 | 1,014 | 406 | | 55,850 |
| District of Columbia..... | 29,312 | 3,257 | 2,120 | 1,413 | | 36,102 |
| Total..... | 4,690,000 | 497,269 | 146,186 | 94,803 | 1,940,474 | 7,368,732 |

TABLE C.—National summary of estimated costs—Sec. 108 (d)

[Thousands of dollars]

| State | Preliminary engineering (surveys, detail plans, specifications, contract documents) | Right-of-way | Construction | Amounts already available (table B) | Federal-aid and State matching funds required to complete system |
|---------------------------|---|--------------|--------------|-------------------------------------|--|
| Alabama..... | 20,939 | 93,172 | 640,841 | 121,087 | 633,865 |
| Arizona..... | 24,336 | 26,062 | 446,507 | 57,812 | 439,093 |
| Arkansas..... | 9,241 | 29,940 | 362,086 | 82,097 | 319,170 |
| California..... | 242,543 | 650,722 | 2,909,128 | 536,033 | 3,266,360 |
| Colorado..... | 10,658 | 20,625 | 293,051 | 75,271 | 249,063 |
| Connecticut..... | 14,104 | 84,376 | 385,046 | 91,513 | 392,013 |
| Delaware..... | 6,404 | 15,989 | 176,721 | 85,911 | 113,203 |
| Florida..... | 24,872 | 213,769 | 690,317 | 96,109 | 832,849 |
| Georgia..... | 21,841 | 83,475 | 800,892 | 130,645 | 775,563 |
| Idaho..... | 11,280 | 16,608 | 249,182 | 55,435 | 221,635 |
| Illinois..... | 70,032 | 268,765 | 1,926,776 | 617,306 | 1,648,267 |
| Indiana..... | 55,692 | 136,949 | 875,113 | 140,705 | 927,049 |
| Iowa..... | 9,443 | 53,985 | 364,669 | 123,101 | 304,996 |
| Kansas..... | 10,158 | 52,983 | 319,349 | 94,951 | 287,539 |
| Kentucky..... | 26,674 | 55,559 | 586,612 | 103,931 | 564,914 |
| Louisiana..... | 27,273 | 113,821 | 799,140 | 91,194 | 849,040 |
| Maine..... | 7,526 | 8,218 | 198,346 | 48,738 | 165,352 |
| Maryland..... | 26,619 | 126,682 | 677,538 | 106,807 | 724,032 |
| Massachusetts..... | 37,236 | 196,991 | 818,951 | 158,102 | 895,066 |
| Michigan..... | 49,366 | 321,928 | 1,086,028 | 194,289 | 1,263,033 |
| Minnesota..... | 26,153 | 107,888 | 594,178 | 122,202 | 606,017 |
| Mississippi..... | 7,596 | 28,659 | 404,549 | 87,730 | 353,074 |
| Missouri..... | 39,340 | 158,250 | 865,266 | 145,923 | 916,933 |
| Montana..... | 18,110 | 13,701 | 414,986 | 81,398 | 365,399 |
| Nebraska..... | 9,063 | 31,792 | 242,201 | 84,825 | 198,231 |
| Nevada..... | 8,785 | 20,754 | 192,297 | 53,776 | 168,060 |
| New Hampshire..... | 7,102 | 14,925 | 195,311 | 40,686 | 176,652 |
| New Jersey..... | 42,321 | 245,224 | 1,124,686 | 372,075 | 1,040,156 |
| New Mexico..... | 15,231 | 26,604 | 405,073 | 61,886 | 385,022 |
| New York..... | 82,353 | 334,098 | 2,242,593 | 1,067,022 | 1,592,022 |
| North Carolina..... | 7,329 | 38,869 | 268,703 | 140,572 | 174,329 |
| North Dakota..... | 1,223 | 8,546 | 194,743 | 62,199 | 142,313 |
| Ohio..... | 78,586 | 520,929 | 1,728,929 | 234,591 | 2,093,853 |
| Oklahoma..... | 9,517 | 31,442 | 348,910 | 97,805 | 292,064 |
| Oregon..... | 7,043 | 103,612 | 517,494 | 71,014 | 557,135 |
| Pennsylvania..... | 52,906 | 126,676 | 1,502,894 | 371,564 | 1,310,912 |
| Rhode Island..... | 7,408 | 40,094 | 135,280 | 33,098 | 149,684 |
| South Carolina..... | 11,028 | 23,855 | 305,686 | 75,818 | 264,751 |
| South Dakota..... | 2,373 | 5,376 | 192,005 | 63,608 | 136,146 |
| Tennessee..... | 33,902 | 158,908 | 883,469 | 123,061 | 952,218 |
| Texas..... | 52,305 | 227,847 | 1,473,702 | 301,603 | 1,452,251 |
| Utah..... | 14,325 | 19,328 | 315,095 | 48,205 | 300,543 |
| Vermont..... | 8,668 | 12,822 | 317,963 | 36,377 | 303,076 |
| Virginia..... | 60,856 | 177,643 | 1,323,516 | 199,997 | 1,362,018 |
| Washington..... | 16,736 | 103,289 | 553,679 | 91,728 | 581,976 |
| West Virginia..... | 18,261 | 52,681 | 400,709 | 68,670 | 402,881 |
| Wisconsin..... | 15,017 | 55,408 | 398,450 | 130,310 | 338,565 |
| Wyoming..... | 10,806 | 4,218 | 372,891 | 53,850 | 334,065 |
| District of Columbia..... | 12,063 | 77,252 | 265,394 | 36,102 | 318,607 |
| Total..... | | | | | ¹ 32,142,055 |

¹ Estimated cost for apportionment of Interstate System funds for fiscal years 1960-62 (includes both Federal and State funds).

TABLE D.—Estimated Federal-aid and State matching costs to complete the system and apportionment factors—Sec. 108 (d)

[Thousands of dollars]

| State | Costs | Apportionment factors | State | Costs | Apportionment factors |
|--------------------|-----------|-----------------------|---------------------------|------------|-----------------------|
| | | <i>Percent</i> | | | <i>Percent</i> |
| Alabama..... | 633,865 | 1.972 | New Hampshire..... | 176,652 | 0.550 |
| Arizona..... | 439,093 | 1.366 | New Jersey..... | 1,040,156 | 3.236 |
| Arkansas..... | 319,170 | .993 | New Mexico..... | 385,022 | 1.198 |
| California..... | 3,266,360 | 10.162 | New York..... | 1,592,022 | 4.953 |
| Colorado..... | 249,063 | .775 | North Carolina..... | 174,329 | .542 |
| Connecticut..... | 392,013 | 1.220 | North Dakota..... | 142,313 | .443 |
| Delaware..... | 113,203 | .352 | Ohio..... | 2,093,853 | 6.514 |
| Florida..... | 832,849 | 2.591 | Oklahoma..... | 292,064 | .909 |
| Georgia..... | 775,563 | 2.413 | Oregon..... | 557,135 | 1.733 |
| Idaho..... | 221,635 | .690 | Pennsylvania..... | 1,310,912 | 4.078 |
| Illinois..... | 1,648,267 | 5.128 | Rhode Island..... | 149,684 | .466 |
| Indiana..... | 927,049 | 2.884 | South Carolina..... | 264,751 | .824 |
| Iowa..... | 304,996 | .949 | South Dakota..... | 136,146 | .424 |
| Kansas..... | 287,539 | .895 | Tennessee..... | 953,218 | 2.966 |
| Kentucky..... | 564,914 | 1.758 | Texas..... | 1,452,251 | 4.518 |
| Louisiana..... | 849,040 | 2.641 | Utah..... | 300,543 | .935 |
| Maine..... | 165,352 | .514 | Vermont..... | 303,076 | .943 |
| Maryland..... | 724,032 | 2.253 | Virginia..... | 1,362,018 | 4.237 |
| Massachusetts..... | 895,066 | 2.785 | Washington..... | 581,976 | 1.811 |
| Michigan..... | 1,263,033 | 3.930 | West Virginia..... | 402,881 | 1.253 |
| Minnesota..... | 606,017 | 1.885 | Wisconsin..... | 338,565 | 1.053 |
| Mississippi..... | 353,074 | 1.098 | Wyoming..... | 334,065 | 1.039 |
| Missouri..... | 916,833 | 2.853 | District of Columbia..... | 318,607 | .991 |
| Montana..... | 365,399 | 1.137 | | | |
| Nebraska..... | 198,231 | .617 | | | |
| Nevada..... | 168,060 | .523 | Total..... | 32,142,055 | 100.000 |

COMPARISON OF PRESENT FINANCING WITH PRESENT ESTIMATE OF COST

After applying the deductions summarized in table B, the total estimated cost to be used in determining the apportionment factors for fiscal years 1960, 1961, and 1962 is shown in table C as \$32,142,055,000. This amount includes approximately \$3,065,409,000 of State matching funds, leaving an estimated \$29,076,646,000 to be supplied from the highway trust fund for the 1960 and later fiscal years.

The Federal-Aid Highway Acts of 1954 and 1956 authorize a total of \$25.0 billions to be appropriated in specific amounts for each of the fiscal years 1957 through 1969 for the purpose of expediting the construction, reconstruction, or improvement of the Interstate System after July 1, 1956. Another \$2.6 billions in State funds would be needed to match these Federal funds at the matching ratios established by the legislation. Thus, the total for Federal and State financing that has been provided under these acts is \$27.6 billions, for the period following July 1, 1956.

By comparison, the total for Federal and State financing to complete the Interstate System after July 1, 1956, as summarized in this report is \$37.6 billions. Of this amount \$33.9 billions represents the Federal share and \$3.7 billions represents the States' matching share.

A tabular comparison of the present financing that was provided by the 1954 and 1956 acts and the financing needs currently estimated in accordance with the 1956 act is given in the following table.

| | Federal share (billions) | State match- ing share (billions) | Total (billions) |
|---|-----------------------------|---|---------------------|
| Current estimate of needed Federal aid - State matching money: | | | |
| For fiscal years 1957-59 (Federal funds already apportioned)..... | \$4. 875 | \$0. 605 | \$5. 480 |
| Required for 1960 and later fiscal years..... | 29. 077 | 3. 065 | 32. 142 |
| Total..... | 33. 952 | 3. 670 | 37. 622 |
| As provided by the 1954 and 1956 acts..... | 25. 000 | 2. 645 | 27. 645 |

Thus it is indicated from the estimates made in 1956-57 that the combined Federal-aid and required State matching finances needed after July 1, 1956, to complete the Interstate System would be about 37 percent greater than the amounts which have been authorized in the 1954 and 1956 acts.

CAUSES FOR THE INCREASED COST REFLECTED IN THIS REPORT

This estimate of cost for completing the Interstate System is higher than the amounts presently authorized because—

(1) The nationwide traffic forecasts for 1975 which were made subsequent to the 1956 act are 15 percent higher than previous forecasts, resulting in a need for more traffic lanes and other facilities. Construction required on the Interstate System by this additional traffic accounts for an estimated 5-percent increase in needed facilities.

(2) Section 116 (b) of the 1956 act states that it is “* * * the intent that local needs, to the extent practicable, suitable, and feasible, shall be given equal consideration with the needs of interstate commerce.” To serve local needs as required by the above portion of the act will require an estimated 63 percent more highway grade separations, interchanges, other structures, and additional frontage roads than had been considered in determining the amounts authorized by the 1956 act. This accounts for an estimated 15-percent increase in total work to be done.

(3) In addition, miscellaneous items such as utility adjustments, lighting, signing, and other incidentals account for some increase, probably aggregating another 3 percent.

(4) Highway construction costs of the Interstate System type have risen 12 percent during the interval between mid-1954 and the last half of 1956 as reflected by the Bureau's price index for Federal-aid highway construction and this increase is applicable to all items.

CONCLUSIONS

These estimates are an accurate appraisal of the cost in each State based on 1956 price levels but do not represent a commitment of funds to the location, design, or cost of individual projects to be undertaken on the Interstate System. Before any construction begins, every portion of the system covered by this estimate will be further investi-

gated and studied by the Bureau of Public Roads and State highway department engineers in preparing the detailed designs, plans, and specifications, on which actual construction bids will be invited. It must be recognized that the estimate totals are based on current prevailing factors and carry no forecast of future trends, either upward or downward.

The estimated costs to be borne by the highway trust fund and State matching funds are considered adequate for the purposes described in this report. It is therefore recommended that the estimates and apportionment factors shown in table D be approved by the Congress by concurrent resolution, in order to permit the Secretary of Commerce to apportion the authorized funds for fiscal years 1960, 1961, and 1962 as soon as revenues in the trust fund are estimated to be sufficient as required by the provisions of the Federal-Aid Highway Act of 1956, and the Highway Revenue Act of 1956.

